LISTING OF THE CLAIMS

1. (original) A polymerization process comprising:

polymerizing in a loop reactor having an inner surface, at least one olefin monomer in a liquid medium to produce a fluid slurry comprising solid olefin polymer particles in a liquid medium, wherein said inner surface of said loop reactor has a root mean square surface roughness less than about 120 micro inches.

2. (original) The process of claim 1 wherein said inner surface of said loop reactor has a root mean square surface roughness less than about 110 micro inches.

3. (original) The process of claim 1 wherein said inner surface of said loop reactor has a root mean square surface roughness less than about 90 micro inches.

4. (original) The process of claim 1 wherein said inner surface of said loop reactor has a root mean square surface roughness less than about 70 micro inches.

5. (original) The process of claim 1 wherein said inner surface of said loop reactor has a root mean square surface roughness less than about 50 micro inches.

6. (original) The process of claim 1 wherein said inner surface of said loop reactor has a root mean square surface roughness less than about 30 micro inches.

7. (withdrawn) A method of reducing a friction factor of an inner surface of a loop reactor, the method comprising:

a first polymerization step comprising polymerizing in a loop reactor at least one olefin monomer in a liquid medium to produce a first product fluid slurry comprising a liquid medium and solid olefin polymer particles having a melt index less than 0.3 gm/10 min, wherein the solid olefin polymer particles in the first product slurry impact and smooth the inner surface of the loop reactor, reducing the friction factor of the inner surface;

a second polymerization step comprising polymerizing in said loop reactor at least one olefin monomer in a liquid medium to produce a second product fluid slurry comprising a liquid medium and solid olefin polymer particles having a melt index greater than 0.4 gm/10 min, wherein the solid olefin polymer particles in the second product slurry coat the inner surface of the loop reactor along rough spots of the inner surface, further reducing the friction factor of the inner surface; and

performing the first and second polymerization steps for respective lengths of time such that a root mean square surface roughness of the inner surface of the loop reactor is reduced to less than about 120 micro inches, wherein the respective lengths of time are specified based on size of the reactor, melt

index of the polymer particles, velocity at which the reactor contents are circulated in the reactor, roughness of the inner surface at the start of the first polymerization step, or molecular weight of the polymer particles, or any combination thereof.

8. (withdrawn) The method of claim 7 wherein the solid olefin polymer particles produced in said first polymerization step have a melt index less than 0.2 gm/10 min.

9. (withdrawn) The method of claim 7 wherein the solid olefin polymer particles produced in said first polymerization step have a melt index less than 0.1 gm/10 min.

10. (withdrawn) The method of claim 7 wherein the solid olefin polymer particles produced in said first polymerization step have a melt index less than 0.2 gm/10 min., and the solid olefin polymer particles produced in said second polymerization step have a melt index greater than 0.5 gm/10 min.

11. (withdrawn) The method of claim 7 wherein the solid olefin polymer particles produced in said first polymerization step have a melt index less than 0.1 gm/10 min., and the solid olefin polymer particles produced in said second polymerization step have a melt index greater than 0.5 gm/10 min.

12. – 17. (cancelled)

18. (withdrawn) The method of claim 7 wherein the friction factor is reduced such that the inner surface has a root mean square surface roughness less than about 100 micro inches.

19. (withdrawn) The method of claim 7 wherein the friction factor is reduced such that the inner surface has a root mean square surface roughness less than about 90 micro inches.

20. (withdrawn) The method of claim 7 wherein the friction factor is reduced such that the inner surface has a root mean square surface roughness less than about 70 micro inches.

21. (withdrawn) The method of claim 7 wherein the friction factor is reduced such that the inner surface has a root mean square surface roughness less than about 50 micro inches.

22. (withdrawn) The method of claim 7 wherein the friction factor is reduced such that the inner surface has a root mean square surface roughness less than about 30 micro inches.